

REMARKS

This is in response to the Final Rejection in the Office Action mailed July 26, 2006.

Claims 1 through 10 are currently pending in the application.

Claims 1 through 10 stand rejected.

Applicant proposes to amend claims 1, 4, 6, and 9, and respectfully request reconsideration of the application as proposed to be amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent 6,166,434 to Desai et al., in combination with U.S. Patent 5,137,959 to Block et al.

Claims 1, 3, 4, 6, 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Desai et al. (U.S. Patent 6,166,434) in combination with Block et al. (U.S. Patent 5,137,959). Applicant respectfully traverses this rejection, as hereinafter set forth.

Applicants assert that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure.

Turning to the cited prior art, the Desai et al. reference teaches or suggests a die clip for use in a semiconductor flip chip package as a replacement for the combination of a heat spreader and stiffener. The die clip engages the die while leaving some space open around the perimeter to provide access to the die. An under fill material is dispensed into the gap between the die and the substrate through an opening in the die clip.

The Block et al. reference teaches or suggests the use of alumina platelets used as thermally conductive, insulating filler in thermally conductive, insulating elastomers.

Applicants assert that any combination of the Desai et al. reference and the Block et al. reference does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because any combination of such cited prior art, at the least, fails to teach or suggest all of the claim limitations of the inventions of independent claims 1, 4, 6, and 9. Applicants assert that any combination of the Desai et al. reference and the Block et al. reference does not teach or suggest the claim limitations of the inventions of independent claims 1, 4, 6, and 9 calling for “a heat sink cap having a portion thereof contacting a portion of the substrate covering the gel elastomer, the semiconductor die, the plurality of solder balls, the substrate free of gaps therewith, the heat sink cap contacting at least a portion of the gel elastomer”, “a heat sink cap having the substrate and a portion of the gel elastomer, the heat sink cap covering the gel elastomer, the semiconductor die, the plurality of solder balls, and portion of the substrate free of any space therebetween”, “a heat sink cap having the substrate covering the compliant adhesive, a thermally conductive material gel elastomer, the semiconductor die, the plurality of solder balls, a portion of the substrate having no space therebetween, the heat sink cap contacting at least a portion of the gel elastomer”, and “a heat sink cap having the substrate and a portion of the compliant adhesive, a thermally conductive material gel elastomer, the heat sink cap covering the compliant adhesive, gel elastomer, the semiconductor die, the plurality of solder balls, and at least a portion of the substrate in contact therewith having no space therebetween”. Applicants assert that the Desai et al. die clip does not contact a portion of the substrate as a gap is located between the die clip and the substrate in at least one instance if not a continuous gap to allow for the dispensing of underfill into the die clip.

Accordingly, presently amended independent claims 1, 4, 6, and 9 are allowable as well as dependent claims 2, 3, 5, 7, and 8 therefrom.

Obviousness Rejection Based on U.S. Patent 6,166,434 to Desai et al. and U.S. Patent 5,137,959 to Block et al., as applied to claims 1, 4, 6 and 9, and further in combination with U.S. Patent 6,225,695 to Chia et al.

Claims 2, 5, 7 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Desai et al. (U.S. Patent 6,166,434) and Block (U.S. Patent 5,137,959), as applied to claims 1, 4, 6 and 9, and further in combination with Chia et al. (U.S. Patent 6,225,695). Applicant respectfully traverses this rejection, as hereinafter set forth.

Applicants assert that dependent claims 2, 5, 7, and 10 are allowable as they depend from allowable presently amended independent claims 1, 4, 6, and 9.

ENTRY OF AMENDMENTS

The proposed amendments to claims 1, 4, 6, and 9 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application to clearly comply with the provisions of 35 U.S.C. § 132. Further, Applicant requests entry of this amendment because the amendments to the claims do not raise new issues as any such issues regarding the amendments to the claims were considered in the Final Rejection or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

CONCLUSION

Claims 1 through 10 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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Date: September 22, 2006
JRD/sfc:lmh
Document in ProLaw